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the Italian Case

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Is Inflation a Monetary Phenomenon Only?

A Non Monetarist Episode of Inflation: the Italian Case

Giancarlo Bertocco

Introduction

The publication of the second edition of Fratianni and Spinelli's *Monetary History of Italy* offers the opportunity to analyze the causes behind the inflation pattern in Italy in the three decades preceding the entry of the country in the European Monetary Union. The two authors reconstruct the monetary history of Italy using the monetarist theory as an interpretation scheme, and assert that the Italian experience represents a significant confirmation of the validity of that theoretical model.¹

This paper has two objectives. The first consists in showing the limits of the explanation of Italian inflation based on the monetarist theory; the second consists in providing an alternative explanation whereby the pattern of Italian inflation basically depends on the trend of production costs and on the behavior of companies in connection with mark-up definition. This paper is subdivided into two parts. In Part I, the summary of the most significant aspects of the monetarist interpretation is followed by a review of its weak points. In Part II, an alternative interpretation of the evolution of inflation in Italy is presented.

PART I: A CRITICISM OF THE MONETARIST INTERPRETATION

1) The Monetarist Interpretation

At first glance, the pattern of inflation in Italy in the last three decades of the 20th century seems to confirm the validity of monetarist theories. The strong increase in the inflation rate in the '70s could be explained by the expansionist monetary policy adopted with the purpose of minimizing the costs borne to finance the growing public debt. Furthermore, it would appear reasonable to consider the curbing of inflation in the '80s and '90s as the result of the commitment of monetary authorities to pursue the objective of price stability.²

This interpretation has a limit: it does not explain the reasons behind the exchange rate crisis in September 1992 when the Italian lira was heavily devalued and forced to

¹ The influence of Friedman and Schwartz (1963, 1982) is evident.

² Inflation rate values are shown in Figure 1.

leave the European Monetary System. According to Fratianni and Spinelli, the basic cause for the currency crisis is to be seen in the limits of the anti-inflationary monetary policy adopted in the '80s. Only after the crisis of 1992, the monetary authorities decided to adopt a stricter monetary policy as compared to that pursued in the '80s. Following the adoption of these measures, during the course of the '90s, the inflation differential between Italy and the other European countries was cancelled. Fratianni and Spinelli believe that in the three decades preceding the entry of Italy in the European Monetary Union the enforcement of the monetary policy was substantially discontinuous.

According to the monetarist interpretation, in the '70s, fiscal dominance - the monetary policy being more accommodating than fiscal policy - reached striking dimensions. Fratianni and Spinelli underline that in those years the monetary authorities adopted extraordinary administrative measures including a ceiling on the quantity of bank loans and portfolio constraints aimed at cutting the costs of public debt financing.³ Accommodating monetary policy created a vicious circle since this favored the expansion of indebtedness compelling monetary authorities to further expand the creation of money, thus causing: "an unprecedented inflationary process in peace time in terms of level and persistence as well as a fast succession of deep currency crises".⁴ In the '80s, after the adhesion of Italy to the European Monetary System, the monetary policy recorded positive changes. Monetary authorities acquired a greater independence from the Treasury; administrative ties were eliminated. Notwithstanding these changes, in the '80s, Italian inflation remained significantly higher than that of countries such as Germany, United States and Japan. Fratianni and Spinelli believe that this unsatisfactory result is due to the limits of the monetary policy adopted in the '80s. Bank of Italy made a mistake in implementing an anti-inflationary policy based on the stabilization of the exchange rate rather than on the control of monetary aggregates. This policy led to an overvaluation of the lira exchange rate; this caused the disequilibria at the origin of the exchange rate crisis of 1992.⁵ Fratianni and Spinelli repeatedly underline that the higher Italian inflation in the '80s is explained by the high growth rate of the quantity of money. They compare the data of the 1979-1991 period with those relating to the 1861-1998 period, excluding the war years and remark that:

“ - the annual monetary creation in the EMS years exceeds by 2.5 percent that in the long run;

- the average annual inflation in the EMS years is 10.4 percent higher, while that of the long term is up 4.4.”(Fratianni and Spinelli (2001), p.490)

³ Fratianni and Spinelli (2001), p. 721. The ceiling of total bank loans established a maximum limit to the expansion of bank loans. Portfolio constraints obliged banks to purchase a set minimum volume of public securities.

⁴ Fratianni and Spinelli (2001), p. 721; see also p. 477.

⁵ Fratianni and Spinelli (2001), p. 486.

Fratianni and Spinelli believe that Governor Ciampi, who led the Bank of Italy between 1979 and 1993, was responsible for not having perceived the limits of a foreign exchange rate stabilization policy not combined with a strict control of monetary aggregates. His responsibilities were even heavier due to the fact that the Governor knew the virtuous example of countries such as Germany, Great Britain and United States as well as the correct guidelines worked out by his predecessor, Paolo Baffi.⁶

In the '90s, notwithstanding the strong devaluation of the lira, the inflation curbing process continued; in the second half of the decade, the inflation differential with the most virtuous European countries was eliminated. In the opinion of Fratianni and Spinelli, the merit of this result - which allowed Italy to enter the European Monetary Union - is to be ascribed to Governor Antonio Fazio. He succeeded Ciampi in 1993, and implemented a correct anti-inflationary policy based on the control of monetary aggregates from the second half of 1994.⁷ The effectiveness of the monetary policy is illustrated by the data relating to the variation rate of money quantity:

“The progressive monetary squeeze is shown by the sharp fall in the annual change in the M2 aggregate: from 9 percent in 1991 to 7 percent in 1993, to 3 percent in 1995, to -5 in 1997 and to -1 in 1998... The monetary squeeze appears even more significant when considering the concurrent strong and progressive reduction in the shares of the compulsory reserve required to bring the Italian banking system up to the level prevailing in the other European countries...” (Fratianni and Spinelli (2001), p. 528)

Fratianni and Spinelli praise Governor Fazio for having been able to define an anti-inflationary policy based on the control of monetary aggregates rather than on the exchange rate stability – this being a consequence of price stability which is to be achieved through the control of money quantity. The monetary authorities should handle interest rates with the aim of controlling the quantity of money and not of stabilizing the exchange rate. On the basis of Governor Fazio yearly reports, Fratianni and Spinelli state:

“The reversal of causality between money and exchange rate is unquestionable when compared with the pre-Fazio era, when price stability was depending on foreign exchange rate stability. The consequence of that reversal is also a precise analysis of inflation curbing since it was centered on the subsequent rise of interest rates, money slowdown and price curbing.” (Fratianni and Spinelli (2001), p. 689)

Hence, Governor Fazio's action would be the result of a deep cultural change leading to the giving-up of a theoretical scheme based on the idea that inflation is not significantly influenced by the monetary policy, and the stability of prices is to be

⁶ Fratianni e Spinelli (2001), pp.676-677. In 1991, Fratianni and Spinelli had expressed a quite different opinion on Ciampi, who they believed had the merit of having enforced the strategy developed by his predecessor Paolo Baffi.

⁷ Fratianni and Spinelli (2001), p. 516.

achieved through the control of production costs and the stabilization of foreign exchange rates. Governor Fazio is to be given credit for avoiding the errors made by his predecessor. As a matter of fact, Fazio's courageous decisions produced the important results attained during the course of the '90s.⁸

2) The Limits of the Monetarist Interpretation

The monetarist interpretation is based on the existence of a close relationship between money and prices as envisaged by the quantitative theory of money. The high inflation of the '70s is explained by the excessive creation of money due to "fiscal dominance". In the '80s, the monetary authorities aimed at reducing inflation; however, they enforced a wrong policy based on foreign exchange rate stabilization rather than on the control of money quantity. This explains the unsatisfactory results recorded in those years. In the '90s, a correct policy based on the control of money quantity made it possible to offset the difference between inflation in Italy, on the one side, and in the other more virtuous European countries, on the other.

I intend to prove that this interpretation is not correct since in the period under consideration the conditions required to ensure the validity of the quantitative theory of money did not exist in Italy. The causal relationship between money and prices has to be based on three conditions: the first assumption should be that the money supply is independent from demand and, therefore, disequilibria on the money market might occur due to exogenous variations in supply. The second assumption should be that disequilibria between money demand and supply originate significant changes in the aggregated demand. The third assumption is that these changes in the aggregated demand cause only variations in the level of prices since in the long run real income is independent from money quantity.

The first two assumptions the quantitative theory is based on did not match the actual conditions observed in Italy in the period under consideration. I intend to show that the changes in the money quantity recorded during the period being the object of this analysis were caused by changes in demand rather than in supply; therefore, the quantity of money should be considered endogenous rather than exogenous. I will also explain the reasons why significant changes in the aggregated demand cannot be associated to the observed variations in the money quantity. I discuss these points in the following three paragraphs: in the first one, I consider the endogenous character of money supply; in the second, I analyze the relationship between money quantity and aggregated demand; in the third, I present some data as evidence for the criticism against the monetarist interpretation of the Italian experience.

2.a) The Endogenous Character of Money Quantity

⁸ Fratianni and Spinelli (2001), p. 699.

The monetarist interpretation underlines the discontinuity of the manoeuvre relating to the money quantity in the '80s and '90s. Only in the '90s, the authorities seemed to succeed in effectively controlling the money quantity, thus achieving important results in terms of inflation reduction. This reconstruction of the Italian experience does not seem correct. The monetary policy pursued in the '80s and '90s was characterized by an element of continuity consisting in the interest rate manoeuvre. In these years, the anti-inflationary action was based on the interest rate manoeuvre. Neither in the '80s nor in the '90s the monetary authorities aimed at controlling the money quantity. It is indeed true that during the course of the '90s the monetary authorities took the monetary aggregates into greater consideration than in the past,⁹ and announced a planned value of the growth rate of the money quantity. However, at the same time, they did not comply with the planned monetary values. The monetary authorities conducted their anti-inflationary action by manoeuvring interest rates, and accepted significant differences of the money quantity growth rate as compared with the planned values – these differences being caused by money demand reaction to the changes in interest rates.

In the early '90s, the monetary authorities set a range of values relating to the growth rate of the money quantity. This range was 5-8 percent for 1991 and 5-7 percent for the subsequent years until 1994. In 1993, the monetary authorities accepted a money-quantity growth rate above the set ceiling. This difference was due to a change in the portfolio structure following some changes in yield rates.¹⁰ In the second half of 1994, the monetary authorities started implementing a restrictive manoeuvre aimed at challenging the signs of inflation deterioration. Bank of Italy remarked that, during the course of the '90s, a new important element – this being inflation expectations – had entered the mechanism of transmission connecting monetary instruments to the inflation target. The importance of this new element is justified by the process of liberalization of capital movements and by the foreign exchange rate flexibility.¹¹ In such a context, a vicious circle might develop; this would be based on the following sequence: deterioration of inflation expectations - devaluation of the foreign exchange rate - increased prices of imported goods - increased inflation rate - deterioration of inflation expectations.¹² In order to avoid such a vicious circle, monetary authorities have to take prompt action, and increase interest rates when in the presence of the first signs of deteriorating expectations, without waiting for any increase in prices. In the second half of 1994, monetary authorities behaved in this way, and raised interest rates in order to respond to a devaluation of the exchange rate which was an indication of deteriorating inflation expectations, although the inflation rate had not risen.¹³ The 0.5 percent increase in

⁹ See for example the Bank of Italy 1993 Yearly Report (BIYR 1993), p. 163; BIYR 1994, p. 173.

¹⁰ "In 1993, the M2 variation... was 7.9 percent. A growth slightly exceeding the planned ceiling... is to be ascribed not only to the marked fall in the yield of Treasury bonds (short term securities), but also to the supply policies of intermediaries and to the back-flow of capital from abroad." (BIYR 1993, p. 168).

¹¹ BIYR 1994, p. 177; BIYR 1995, p. 168.

¹² BIYR 1995, p. 170.

¹³ BIYR 1994, p. 177.

the official discount rate in August 1994 was followed by two further rises in 1995 for a total of 1.5 percentage points. The manoeuvre continued until mid 1996. In the presence of a concurrent increase in interest rates, a significant reduction in the money quantity growth rate was recorded. In the 1994-1996 period, the growth rate of the money quantity was permanently below planned values. The central bank had set an interval between 5 and 7 percent for 1994, while for the two subsequent years a planned value of 5 percent had been indicated. In all years, the M2 growth rate was significantly lower: 3.1 percent in 1994, 1.9 per cent in 1994 and 2.6 percent in 1995. These figures – being far below planned values - did not lead the monetary authorities to consider that they had implemented an excessively restrictive manoeuvre. The central bank did not adopt measures so as to comply with the planned value of the money growth rate. The monetary authorities actually considered the reduction of the money-quantity growth rate as a consequence of the change in the money demand due to the increasing opportunity money cost resulting from the greater difference between the yield of assets alternative to money and the yield of bank deposits. The 1994 report outlines:

“The last year’s slowdown (of the M2 growth rate) matched the marked rise of the rates of interest on savings instruments alternative to bank deposits, and was affected by the greater caution of intermediaries in setting the rates on deposits: in the May-December period, the average yield of Treasury bonds rose by almost two percentage points while that of bank deposits declined by 0.4 per cent.” (BIYR 1994, p. 173)

The same arguments are used to explain the 1995 figures.¹⁴ It can, thus, be concluded that the monetary authorities did not correct the value of the money growth rate with reference to the planned value because those figures were consistent with the objective of inflation control. This objective was pursued by influencing inflation expectations by acting on interest rates.

In short, the first assumption the quantitative theory of money is based on did not prove true. The disequilibria between money demand and supply, which cause inflation according to the quantitative theory, cannot appear when the monetary authorities control interest rates as in the case of Italy in the ‘80s and ‘90s. In this case, the changes in the money quantity are the consequence of changes in the money demand - *i.e.* of modifications of portfolio choices.

The behavior of the Italian monetary authorities is not an exception in respect of other industrialized countries. The decision made in many countries to follow an inflation targeting strategy is justified by the high instability of the relationship between money quantity and the targets of the monetary authorities.¹⁵ Romer (2000) remarks that the strategy of the central banks of the most important countries is based on the manoeuvre of interest rates, and is not aimed at pursuing a specific target in terms of money quantity. The Bank of England - that Fratianni and Spinelli mention as a model - follows a strategy which does not envisage the control of monetary

¹⁴ BIYR 1995, p. 173.

¹⁵ See for example Leidermann and Svensson (1995); Mishkin (1999).

aggregates.¹⁶ Another interesting example is provided by the choices of the European Central Bank. Meltzer (2001) considers the ECB's decision to assign a central role to money quantity as a positive example when compared with the Federal Reserve's decision to ignore money quantity. In this connection, it may be interesting to note, in the first place, that money quantity is not an intermediate target for the ECB, which while announcing the money quantity growth rate that it considers consistent with the objective value of the inflation rate, does not feel bound to comply with this value.¹⁷ In the second place, it has to be underlined that the announcement of the money quantity growth rate is the first of the two pillars on which ECB anti-inflationary strategy is based on. The second pillar is the monitoring of a wide range of economic and financial indicators including wages, foreign exchange rates, prices of securities, various measures of the real economic activity, fiscal policy indicators, and price and cost indices. According to the ECB, these two pillars provide two different explanations of inflation:

“The first pillar represents approaches which attribute a prime value to money in explaining the future evolution of prices... The second pillar includes a series of alternative models of the inflationary process, mainly those emphasizing the interaction between supply and demand and/or the pressures related to costs.”(ECB, 2001, p. 42)

The use of these two pillars mirrors the decision not to follow a single theoretical line as well as the awareness that an anti-inflationary strategy exclusively based on the control of the money quantity has indeed some limits.¹⁸

2.b) Money Quantity and Aggregated Demand

According to the quantitative theory, the presence of a disequilibrium between money demand and supply due to a sudden change in supply, causes a change in the aggregated demand. Friedman illustrates this relationship in various ways. The first case is the famous example whereby the new money is launched from a helicopter. Friedman (1969) considers a balanced system in the frame of which operators express a given money demand in real terms. For example, if demand is equal to one tenth of the income, against a 10,000 dollar income the money demand will be 1,000 dollars. With reference to such a situation, Friedman assumes that a helicopter drops 1,000 new dollars from the sky. All operators collect the new money. If people just keep the new money, income and prices would remain unchanged. However, Friedman

¹⁶ Bank of England 1999, p. 9.

¹⁷ ECB 1999, 2000.

¹⁸ “It is not advisable to exclusively rely on the first pillar for the analysis underlying monetary policy decisions on the basis of the following two arguments. First, due to the variable speed of money circulation it may be sometimes difficult to interpret short term monetary patterns and to identify the signs of risks relating to price stability... Second, to exclusively rely on the first pillar involves the risk to pay insufficient attention to medium-term price stability risks resulting from the pattern of variables other than money.” (ECB 2001, p. 47).

remarks that it is not logical to think that individuals simply increase their money reserves. If all individuals deemed it appropriate to hold a money quantity equal to one tenth of their income, there is no reason to think that, after the launching of the money from the helicopter, they modify their behavior, and decide to accumulate a money reserve equal to one fifth of their income. As a result, any change in the money supply will lead operators to reduce their money reserves by demanding goods. This leads to a consequent rise in prices. Symmetrical effects derive from a sudden reduction in the money quantity. In this case, Friedman assumes that the public sector burns the money collected with a new tax in an incinerator. In both cases, the change in the money supply is combined with a change in the aggregated demand. In the case of the helicopter, individuals ask for a greater quantity of goods because their nominal and real wealth increases; in the case of the incinerator, the cut of the money supply leads to a reduction in the spending capacity of individuals.

The second explanation by which Friedman describes the consequences of the changes in the money supply is based on the distinction between money market and credit market. He asserts that the money market operates as any other market characterized by a demand function, a supply function and a price. The critical point is the correct definition of the money price. Friedman remarks that a misunderstanding often arises as to 'money' and 'credit'. This leads to a non correct definition of the money price. Friedman says that the money price is the quantity of goods that can be purchased with a money unit and, consequently, corresponds to the reciprocal value of the price level; instead the interest rate corresponds to the credit price. A disequilibrium between money demand and supply will, therefore, cause a change in the level of prices; a disequilibrium between credit demand and supply will instead lead to a change in the interest rate.¹⁹ The different impact of changes in money quantity and credit on prices is explained by considering the different effects that they produce on the aggregated demand. In the case of the money market, it is assumed that the spending capacity of individuals varies as the money quantity changes. On the other hand, in the case of the credit market, an increase in the credit supply does not involve any change in the aggregated demand since the greater demand for goods by credit beneficiaries is offset by the lower demand by credit suppliers.

The analysis of the Italian experience in the '80s and '90s seems not to provide elements confirming the relationship between money quantity variation and level of the aggregated demand as described by monetarists. As previously stated, in those years, the monetary authorities controlled interest rates; then, the changes in the money quantity reflected the conditions of demand. The conditions do not exist to associate the observed changes in the money quantity to the modifications of the aggregated demand assumed by Friedman in the example of the helicopter or when he describes the difference between credit and money markets. Fratianni and Spinelli attribute significant anti-inflationary effects to the reduction in the money quantity growth rate recorded in the period 1994-1996. It is actually difficult to imagine that these changes in the money quantity - which mirror the impact of decisions relating to

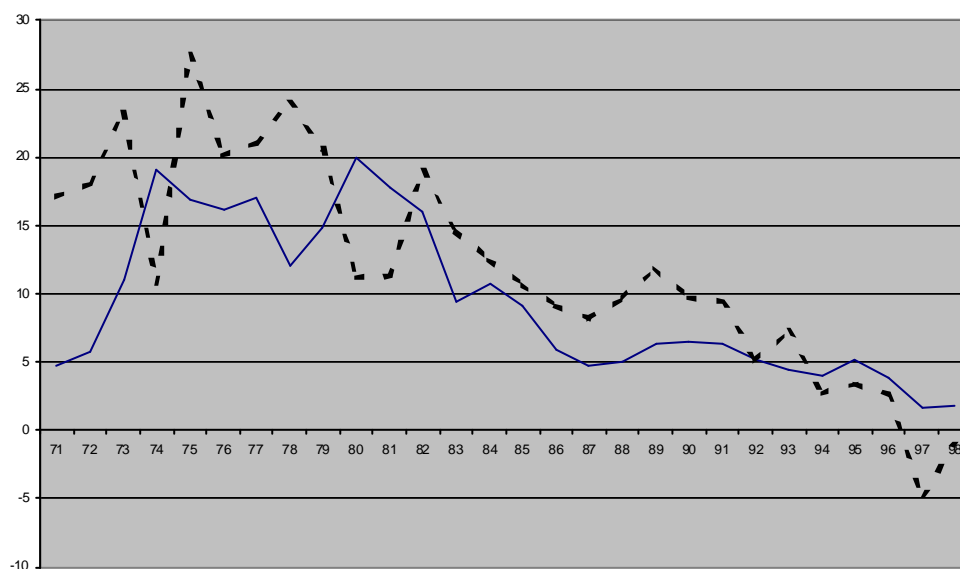
¹⁹ Friedman and Schwartz (1982), p. 26.

wealth composition - may have had effects similar to those described by Friedman when using the example of the incinerator.

It seems equally unrealistic to believe that the high interest rate policy pursued by the monetary authorities during those years led to a reduction in stock prices and, therefore, in the market value of households' wealth to an extent susceptible of generating a significant decline of the aggregated demand and, hence, of the inflation rate. A superficial analysis of the composition of households' financial wealth highlights the total absence of this phenomenon. On the contrary, between 1995 and 1999, a marked increase was recorded in the share of stocks in the total financial wealth: from 18.5 percent in 1995 to 45.6 percent in 1999.²⁰ This evolution reflects the marked rise of stock exchange quotations. The Italian experience shows not only that the increase in interest rates between 1994 and 1996 did not trigger a negative wealth effect, but also that the substantial positive wealth effect stemming from the upsurge of stock prices did not hinder the process of inflation curbing.

2.c) Some Figures

In this paragraph, some data consistent with the considerations expressed in the previous pages are provided. Figure 1) shows the variation rates of the money quantity and inflation rates. At first glance, these figures seem to confirm the validity of the monetarist interpretation. In the '70s, the increasing inflation rate and high growth rates of the money quantity were concurrent; in the '80s and '90s, the curbing of inflation coincided with the reduction of the money quantity growth rate.



²⁰ BIYR 2000, p. 214.

Figure 1)
Inflation rate (---) and variation rate of the quantity of money M2 (- - -)
 (source: Bank of Italy)

This empirical evidence is similar to what is generally used to prove the validity of the monetarist theory. These are verifications considering the long-term correlation between the money growth rate and the inflation rate by using data relating to a large number of countries. For example, McCandless and Weber (1995) utilize the average growth rates of the money quantity and the inflation rate in a 30-year period (1960-1990) relating to 110 countries. Dwyer and Hafer (1988) utilize the average data relating to a five-year period (1979-1984) concerning 62 countries. In both cases, results consistent with the conclusions of the money quantitative theory are obtained. The data included in Figure 1) also show a significant correlation between the money quantity and the inflation rate: in the '70s, the 19.5 percent average growth rate of the money quantity matched a 13.6 percent average inflation rate; in the '80s, the money average growth rate dropped to 11.4 percent and the average inflation rate to 9.1 percent. Finally, in the '90s, the money average growth rate reached 4 percent and average inflation rate fell to 2.2 percent. The possibility to use the data of Figure 1) as a confirmation of the validity of the quantitative theory is questioned for two reasons. In the first place, there is no evidence permitting to consider the changes in the money quantity as exogenous in respect of price changes. According to the quantitative theory, changes in the money quantity have to mirror the disequilibria between demand and supply caused by sudden variations of supply. In the previous pages, it was underlined that during the course of the '80s and '90s monetary authorities controlled interest rates without establishing a target in terms of money quantity - which has to be considered as an endogenous factor. In the second place, it has to be pointed out that the data in Figure 1) suggest that the '80s and '90s are to be considered as a homogeneous period characterized by a reduction of the money quantity growth rate and by the curbing of the inflation rate. However, this interpretation does not explain the reasons behind the currency crisis in 1992. If in the '80s the monetary policy was correctly implemented by lowering the growth rate of the money quantity, what are the reasons for the 1992 devaluation? As previously mentioned, Fratianni and Spinelli believe that the basic reason for the currency crisis lies in the limits of the anti-inflationary policy pursued in the '80s. In that period, the Italian monetary authorities seem not to have applied a sufficiently rigorous manoeuvre. In the '80s, the money quantity grew at a faster pace than in the '90s when it would have permitted to eliminate the inflation differential in respect to more virtuous countries.

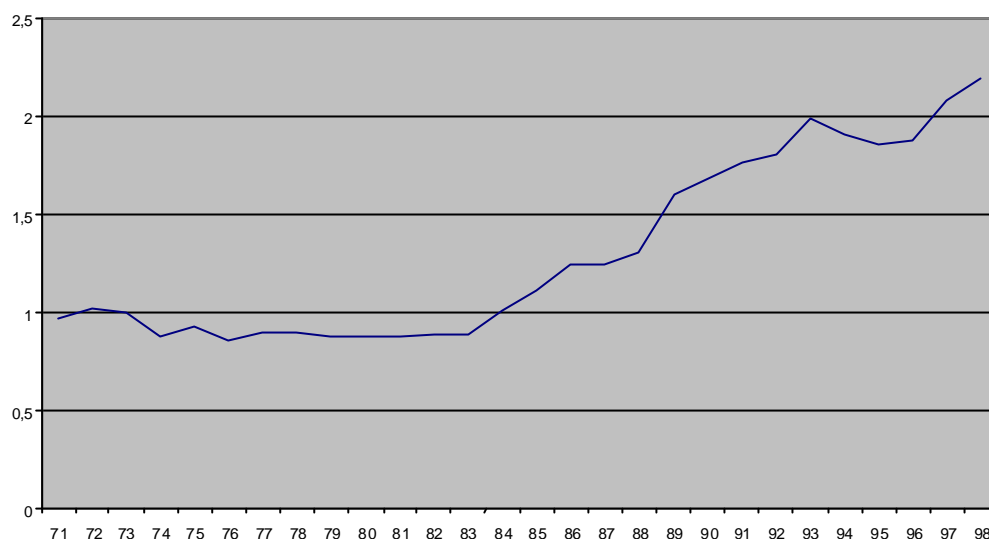


Figure 2) Households' financial assets/GDP (source: Bank of Italy)

Fratianni and Spinelli's interpretation is based on the idea that the rate of variation of the money quantity is an indicator that sufficiently represents the lines pursued by the monetary policy. This point of view is not convincing. The money quantity measured by the financial accounts corresponds to the money held by system operators. Hence, when measuring the money quantity, money is considered as a component of the operators' wealth. This implies that even admitting that monetary authorities control money supply, the strength of the monetary manoeuvre cannot be assessed by exclusively considering the rate of variation of the money quantity. It is necessary to also take the size and variation of wealth into consideration.²¹ The rate of variation of the money quantity being equal, the manoeuvre of the monetary authorities will be the more restrictive the greater the rate of variation of financial wealth is. Consequently, when admitting that monetary authorities control the money quantity, the most significant data to assess the strength of a monetary manoeuvre should be the relationship between the money stock and operators' financial wealth. Figure 2) presents the pattern of households' financial wealth in relation to GDP. This ratio was substantially constant in the '70s, and markedly increased in the '80s. In 1983, households' financial wealth was 0.88-fold GDP, and 1.8-fold in 1993; in the following years, this ratio declined, and grew again in 1997 and 1998 when it reached

²¹ Friedman (1956) emphasizes that the quantitative theory is a money demand theory, and that the analysis of money demand may be conducted as the consumer goods demand theory is developed. As to money demand, budget constraint is wealth rather than income.

the value of 2.18. In the '80s, the households' financial wealth grew much faster than in the '90s. This is confirmed by the figures relating to the households' financial net flows shown in Figure 3). In the '80s, the households financial net flows/GDP ratio swung between 12 and 14 percent. In the '90s, a dramatic drop in the value of this ratio was recorded (from 14 percent in 1991 to 5 percent in 1998).

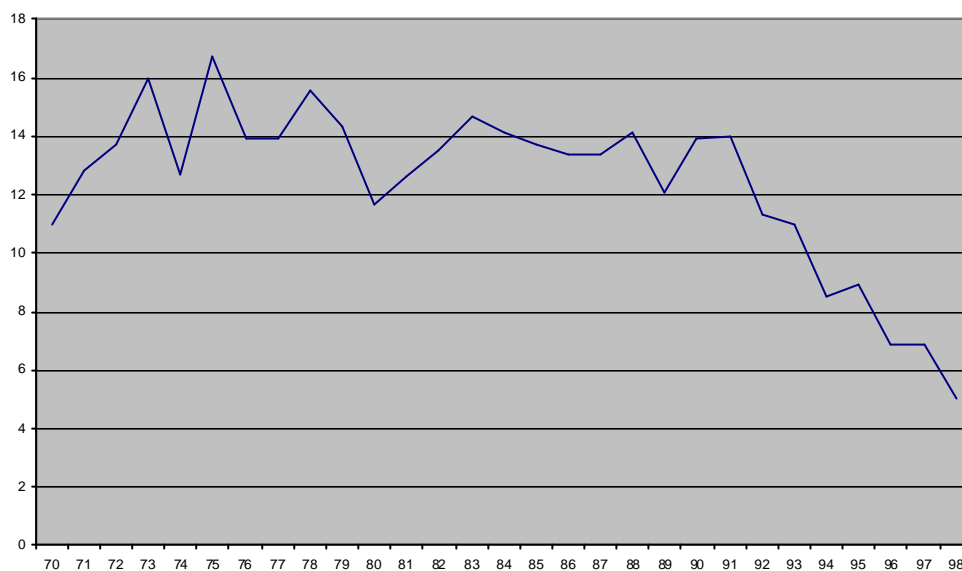


Figure 3) Households' financial net flows/GDP (source: Bank of Italy)

In short, as compared with the '90s, the '80s were characterized by higher rates of variation of the money quantity as well as by a higher growth of households' financial wealth. Figure 4) shows the breakdown of households' financial wealth. The continuous line indicates the share of money; the dotted line represents the share of securities, stocks and mutual fund shares.

In the '70s, a significantly increased share of money was recorded; in the '80s, this share sharply dropped to 68 percent in 1979 and to 35.4 percent in 1992. This is evidence of the fact that in the '80s the households' financial wealth grew at a faster pace than money. In the '90s, the downtrend of the money share continued, although less sharply.

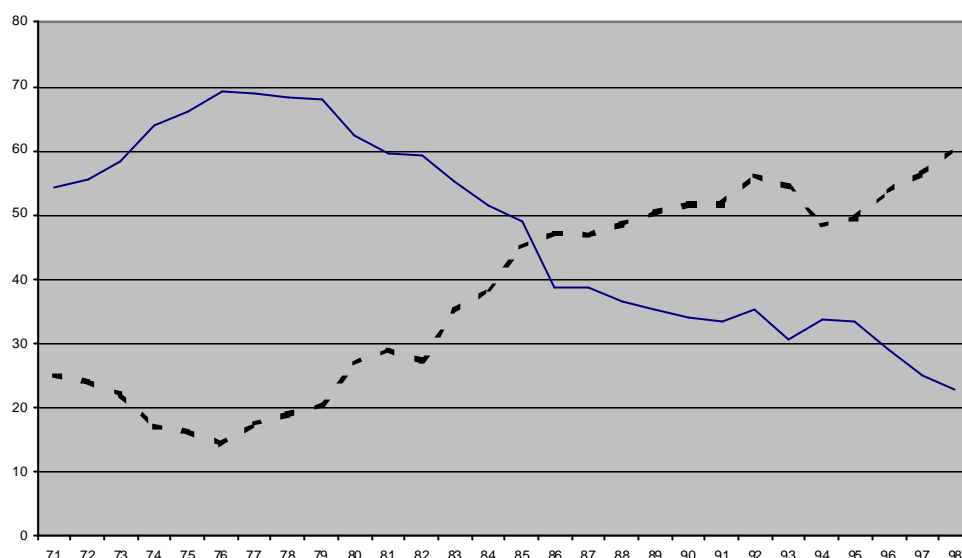


Figure 4) Breakdown of households financial wealth (source: Bank of Italy)

These data confirm that even assuming that the changes in money quantity were caused by monetary authorities, it is impossible to assert that the restrictive manoeuvre implemented in the '90s was stricter than in the '80s. This conclusion is consistent with other two observations: the first relates to the fact that in the '90s the drop in the money share was particularly sharp in the years 1997-1998; the monetary squeeze took place in the 1994-1996 period. The second observation relates to the pattern of real interest rates; on average, real interest rates were higher in the '80s than in the '90s. In the 1981-1992 period, a 5.7-percent average annual value of the real *ex post* rate on Treasury bonds was recorded; in the '90s, the average value was 4.8 percent. Whereas it is not possible to prove that in the '90s the anti-inflationary policy was more rigorous than in the '80s, it is equally not possible - contrary to what Fratianni and Spinelli assert - to ascribe the 1992 currency crisis to an insufficiently rigorous monetary policy, on the one side, and the curbing of inflation in the '90s to the correct policy pursued by monetary authorities, on the other. Consequently, two paramount problems are still unsolved: in the first place, the causes of the 1992 crisis remain to be explained. In the second place, it is necessary to work out an explanation for inflation curbing in the '90s as an alternative to the reasons put forward by monetarists.

PART II: AN ALTERNATIVE EXPLANATION

The evolution of Italian inflation can be more convincingly explained not so much in relation to the monetarist theory, but rather on the basis of a theory on inflation emphasizing the role of the pattern of production costs and of the behavior of enterprises in relation to mark-up definition. This theory is based on three points: a) the stages of inflation expansion cannot be explained only by the accommodating attitude of monetary authorities; b) the monetary policy affects the inflation rate since it has an impact on factors influencing production costs (*e.g.*, foreign exchange rate and the level of aggregated demand); c) a manoeuvre aimed at curbing inflation cannot be exclusively based on the monetary policy, but must also envisage recourse to other instruments such as income and tax policies.

In Italy, monetary authorities strongly favored this theory. In the period under consideration, all four Governors of Bank of Italy - Guido Carli (1960-1975), Paolo Baffi (1975-1979), Carlo A. Ciampi (1979-1993) and the current Governor Antonio Fazio - agreed on this explanation of inflation. The Italian Central Bank underlines that inflation in the '70s cannot be simply explained by the accommodating attitude of monetary authorities, but it is basically to be ascribed to the growth of labor cost and to increased public expenditure.²²

In order to highlight the impact of labor claims on the pattern of labor cost, Carli (1977, p. 58) stated that in the '70s Italy had a labor standard system, *i.e.* "a system characterized by wage as an independent variable". Under these conditions, inflation was the necessary cost to be borne in order to maintain high growth rates.²³ Baffi (BIYR 1978, pp. 377-8) highlighted the non monetary causes of inflation. On the basis of this analysis of the causes of inflation, the Governors of Bank of Italy reached the conclusion that a policy aimed at achieving the stability of prices cannot be based only on the recourse to monetary instruments, but it should also utilize other instruments such as the tax and income policies. Baffi (BIYR 1975, p. 441) pointed out the costs of an anti-inflationary manoeuvre exclusively based on the monetary policy. In the 1980 yearly report, Ciampi wished a new monetary constitution based on the coordinated adoption of monetary, fiscal and income policy measures. In the '90s, Ciampi's successor, A. Fazio, followed the same line:

"In a large and complex economic system the level of prices is strongly affected by other variables and circumstances, first of all fiscal policy and labor costs. In such cases the reliance solely on monetary policy to achieve monetary stability can be extremely costly in terms of other economic objectives." (Fazio (1991), p. 135)

The supporters of the new classic macroeconomics assert that this statements are the expression of an obsolete theoretical approach considering the behavior of enterprises, trade unions and public sector independent from the monetary authorities' decisions. According to this approach, the decisions of enterprises, trade

²²For a deeper analysis of the arguments of the Italian monetary authorities in those years see: Bertocco (1991, 1992); Visco (1995).

²³BIYR 1972, p. 410.

unions and public sector are conditioned by the strength of the anti-inflationary commitment of the central bank. The conclusion is, thus, reiterated whereby inflation is basically a monetary phenomenon substantially due to the measures adopted by the monetary authorities which are in a position to influence the behavior of the other economic subjects. A significant example of this approach is provided by Cukierman (1992), who considers the above statement by Fazio as the expression of an obsolete theoretical scheme since it ignores the impact of the measures adopted by the monetary authorities on the behavior of economic operators.²⁴ Cukierman underlines that the pattern of wages and the public sector's decisions are conditioned by the decisions made by the monetary authorities.²⁵ In the presence of a strict control of the growth rate of the quantity of money, the public sector is not in a position to independently set its deficit as it would face increasing difficulties in financing its expenditure.²⁶

I intend to demonstrate that the theory whereby inflation is due to costs makes it possible to work out a significant explanation of the causes of the currency crisis in September 1992 and of the curbing of inflation in the '90s. On the basis of this theoretical scheme, the '80s and the '90s can be subdivided into two sub-periods separated by the 1992 currency crisis. The two periods are differentiated in relation to the characteristic of the anti inflationary manoeuvre: in the '80s, this manoeuvre was solely based on the monetary policy; in the '90s, after the devaluation, the anti-inflationary action was characterized by the concurrent adoption of monetary, fiscal and income policy measures.

The changes in the characteristics of the anti-inflationary manoeuvre can explain the 1992 currency crisis and the curbing of inflation in the '90s. The devaluation is to be basically ascribed to the disequilibria caused by an anti-inflationary policy exclusively based on monetary measures. On the other hand, the curbing of inflation in the '90s, notwithstanding the heavy devaluation of the lira, may be explained by the effectiveness of a manoeuvre based on the adoption of combined monetary, fiscal and income policy measures. The fact that these measures were not adopted before the 1992 crisis contradicts the arguments put forward by Cukierman and the supporters of the new classic macroeconomics whereby the choices of workers and of the public sector are conditioned by the decisions made by the monetary authorities. Starting from 1979, concurrently with the adhesion to the European Monetary System, the monetary authorities manoeuvred interest rates with a view of stabilizing the foreign exchange rate in relation to the other European currencies. The stabilization policy became the only element of the anti-inflationary manoeuvre. According to Cukierman, the strong commitment of the monetary authorities should

²⁴ Cukierman criticizes Fazio, and asserts that: "This statement is obviously true and realistic. But it ignores the effect of what the public and the political authorities know about the accommodative tendencies of the central bank on the behavior of wages, prices, and the fiscal deficit." Cukierman 1992, p. 15.

²⁵ "... The extent of wage push is itself endogenous. In particular, it reflects what individuals know about the central bank's tendency to accommodate prices, labor costs, and budgetary deficits." Cukierman 1992, p. 15

²⁶ See: McCallum 1999.

have had a significant impact on the behavior of workers and of the public sector. This did not happen. On the contrary, the absence of significant income and fiscal policy measures compelled the monetary authority to raise interest rates to particularly high levels. This led to the disequilibria that are the basic cause of the devaluation of the lira in September 1992. Paradoxically, in coincidence with the devaluation, which marked the failure of the anti-inflationary policy based on the stabilization of the foreign exchange rate of the currency, the conditions were laid for the adoption of the income and fiscal policy measures which made it possible to reduce inflation notwithstanding the devaluation of the lira. The following two paragraphs review the most significant aspects of the two stages of the process of curbing of inflation in the '80s and in the '90s.

3.a) The 1980-1992 Period

Following the adhesion of Italy to the European Monetary System in 1979, the stabilization of the foreign exchange rate became the hinge of the anti-inflationary manoeuvre. The stable foreign exchange rate was an element of discipline for enterprises which could no longer rely on devaluation, and had to protect their competitiveness through the control of costs.²⁷ The monetary authorities protected the foreign exchange rate by using interest rates. The manoeuvre centered on interest rates was possible following the creation - in the mid '70s - of a monetary market, which enabled the central bank to control interest rates in a period characterized by high inflation rates. Such a policy made it possible to significantly reduce the annual rate of variation of consumer prices. This rate dropped from 21 percent in 1980 to 6 percent in 1987, with a corresponding cut of the inflation differential with Germany, from 16 to 4.5 percentage points. At first glance, this policy appears to be consistent with the indications of the most recent developments of the monetary theory whereby the monetary authorities should pursue the objective of price stability by defining a nominal pegging. A significant example of nominal pegging is the setting of a foreign exchange rate in relation to currency of a country with a low inflation rate. This manoeuvre should push inflation expectations of the country to the level of those in the countries with a low inflation rate.²⁸ This manoeuvre is actually not fully effective as shown by the fact that rigorous behaviors of monetary authorities did not influence the behavior of enterprises, of workers and of the public sector contrary to what the new classic macro-economy envisages. Only after the devaluation in 1992, which marked the end of the foreign stabilization policy, significant income and budget policy measures were adopted. In the '80s, the monetary authorities repeatedly pointed out that the high level of interest rates was due to the impact of the foreign

²⁷ See: Ciampi (1988); Gressani, Guiso, Visco (1987); Visco (1995); Pittaluga, Verga (1995); Bertocco (1997); Gaiotti, Gavosto, Grande (1998).

²⁸ The limit of this strategy is that the country stabilizing the foreign exchange rate should give up using monetary policy independently in order to face domestic problems. See Mishkin (1999).

exchange protection policy on the monetary policy.²⁹

This anti-inflationary action led to heavy disequilibria in foreign and public accounts. These disequilibria are the ultimate cause of the devaluation of the lira in September 1992. The equilibrium of the balance of payments obtained by offsetting the deficit of current items with a surplus of capital movements was quite fragile since it was based on the availability of international financial markets to subscribe credit instruments of national operators. In the early '90s, increased interest rates in Germany following the unification process, compelled the Italian monetary authorities to raise interest rates to so high levels that doubts about the capacity of the Italian economic system to bear the effects of such measures were justified. The high interest rate policy also had a significant impact on public accounts. In the '80s, a marked increase in the expenditure for interests was recorded with a consequent rise of public deficit and debt.³⁰

The fragile equilibrium characterizing the '80s became most evident at the end of 1991 when the Maastricht Treaty was undersigned. This Treaty established the parameters required to measure the degree of convergence of the countries that had to participate in the European Monetary Union. The definition of these criteria immediately highlighted Italy's non compliance with the conditions that the Maastricht Treaty considered consistent with the participation in the EMU. The only parameter Italy was complying with was the foreign exchange rate. The levels of inflation rate, interest rate, public deficit and public debt were quite far away from the values established by the Treaty. Expectations of devaluation of the lira spread, and could not be opposed to by the defense measures adopted only by the Italian monetary authorities. This led to the devaluation of the lira and to the exit from the EMS. In short, the devaluation may be considered as the expression of an insufficient anti-inflationary action solely based on monetary policy.³¹

Another important aspect of the experience of the '80s concerns the characteristics of the mechanism of transmission of the monetary policy. The stabilization of the foreign exchange rate did not significantly influence inflation expectations, but it produced its anti-inflationary impact by acting on production costs. A stable exchange rate helps to reduce inflation in two ways: a) by reducing imported inflation, b) by introducing an element of discipline for enterprises which can no longer count on currency devaluation and have to pursue their objectives in terms of competitiveness by reducing their profit margins and production costs. This explanation is frequently found in the papers of the Bank of Italy. Governor Ciampi (BIYR, 1986, concluding remarks, pp. 14-15), emphasized the fact that inflation reduction was favored by the reorganization process by which enterprises reacted to the discipline imposed by the exchange rate, on the one side, and to the high interest rate policy, on the other. This restructuring process would most likely have not been implemented in the absence of a weakened position of the trade unions following the

²⁹ RABdI (1985), final considerations (FC), p. 18; RABdI (1986), FC, p. 27, RABdI (1992), FC, p. 28, RABdI (1993), FC, pp. 10-11.

³⁰ This pattern of interest rates and of public deficit helps to explain the high growth of households' financial wealth in the '80s.

³¹ See for example: Ciccarone and Gnesutta (1993); Sarcinelli (1995); Visco (1995).

unsuccessful outcome of the dispute with Fiat, the major Italian private industry (fall 1980). The Research Department of Bank of Italy published several empirical works highlighting the impact of the foreign exchange rate on the various components of the price index. Significant results were obtained by the analysis performed by Gressani, Guiso and Visco through simulation exercises based on the econometric model of Bank of Italy. These exercises show that if the monetary authorities had implemented - between 1979 and 1986 - an accommodating foreign exchange policy - *i.e.*, if they had permitted a full adjustment of the nominal exchange rate to the differential between the pattern of domestic and foreign prices - on average, inflation would have been about 4 percentage points higher than the historical values.³²

3.b) The '90s

In coincidence with and immediately after the devaluation, important measures of income and budget policy were adopted. This coincidence was not accidental. The devaluation - which occurred less than one year after the Maastricht Treaty and in the middle of a social crisis related to the discovery of widespread phenomena of corruption of the political class - was a traumatic event. The public opinion suddenly realized the difference existing between Italy and the other European countries. In this situation, heavy measures aimed at bringing public accounts back to equilibrium and effective income policy measures were adopted.³³

In September 1992, the Amato government - taking advantage of the currency crisis - succeeded in adopting a 92,000 billion lire manoeuvre aimed at bringing public accounts to equilibrium. In subsequent years, similar manoeuvres made it possible to progressively reduce the public deficit/GDP ratio from over 10 percent in 1991 to below 3 percent as required by the Maastricht Treaty. In July 1993, an agreement containing income policy measures was reached by the government with the social parties. This agreement completed the one signed in July 1992, which had eliminated the wage indexation system based on the so-called "scala mobile" (cost-of-living adjustment). More specifically, the agreement linked the biennial increase in minimum wages to the inflation rate established as a target by the government. At the end of two-year period, if the actual inflation were to exceed the planned level, the social parties were to be called to negotiate the recovery.³⁴

The combination of these events deeply changed the Italian economy. The intensity and the speed of this change may be perceived by comparing the estimates

³² Gressani, Guiso and Visco (1987), p. 154. See also: Nicoletti Altimari, Rinaldi, Siviero and Terlizzese (1997); Siviero and Terlizzese (1997).

³³ See as an example: Arcelli and Micossi (1997); Salvati (2000).

³⁴ Rossi (1998, p.109) underlines the effects of these measures, and points out: "In the 1991-1995 period per capita wages decreased by 3.3 percent in the economy as a whole. Wages remained unchanged in industry where productivity grew by almost 8 percent. In nominal terms, the overall labor cost per product unit increased by only slightly above 2 percent in industry in four years. Twenty years before, in the 1972-1976 period characterized by a dramatic weakening of the lira foreign exchange rate, the same variable grew by 94 percent." See also Onofri (2001).

of the impact of a possible devaluation of the lira worked out by the Bank of Italy in August 1992, with the historical values. By using its own econometric model, the central bank estimated at about 40 percent the short-term elasticity of prices at the current exchange rate, with an increase up to 70 percent in the medium run. Furthermore, the devaluation was expected to bring a greater competitiveness with expansion repercussions on investments and income.³⁵ However, reality was quite different:

“In the two years following the crisis, the devaluation was far higher than expectations, and reached 30 percent. Far from increasing, inflation declined by almost 1.5 percentage points. Investments in machinery collapsed by almost 20 percent in 1993; the average 1994 value was still about 16 percentage points below the level reached in 1991. Still in 1993, for the first time since 1970 consumption had declined by 2.5 percent and GDP fell by more than 1 percent.” (Siviero and Terlizzese, (1995), pp. 842-3)

This decline of domestic demand – notwithstanding export expansion thrusts engendered by devaluation - mirrors a significant change in consumption and investment decisions. The devaluation, the crisis of financial markets, the heavy fiscal manoeuvre, increased households’ uncertainty about their prospects of income, with a consequent depression of consumption. This uncertainty spread through enterprises, and also affected the demand for investment goods.³⁶

These measures of fiscal policy contributed to restraining inflation in two ways: in the first place, it is reasonable to assume that the impact of these measures on the level of aggregated demand induced enterprises to modify their mark-up-related decisions.³⁷ In the second place, measures of fiscal policy influenced inflationary expectations. In Part I of this paper, the fact was pointed out that during the ‘90s, after the currency crisis, the role of expectations in the process aimed at defining inflation became particularly significant. Leiderman and Svensson (1995) stated that decisions relating to the size of the public deficit may have an impact on expectations greater than that of the announcements relating to growth rates of monetary aggregates.³⁸

The pattern of inflation seems to have been considerably influenced also by the measures of income policy adopted following 1992 and 1993 agreements. The anti-inflationary impact of these measures was defined through some simulations made by the Research Department of Bank of Italy.³⁹ The first simulation shows that in the absence of an income policy, inflation would have been 2-3 percentage points higher in 1966 and 3-5 percentage points in 1997.⁴⁰ The second simulation was aimed at defining the interest rate variation required to cut inflation to the level observed in

³⁵ Siviero and Terlizzese (1995).

³⁶ Locarno and Rossi (1995); Visco (1995); Onofri (2000).

³⁷ Bank of Italy’s econometric model assumes that the mark-up varies also in relation to the degree of utilization of production capacity. See Siviero and Terlizzese (1997).

³⁸ See also: Visco (1995); Onofri (2000).

³⁹ Fabiani, Locarno, Oneto and Sestito (1998).

⁴⁰ Fabiani, Locarno, Oneto and Sestito (1998), p. 45.

reality in the absence of an income policy. The simulation shows that monetary authorities should have considerably increased interest rates, which would have led to a public deficit far above 3 percent and to a public debt/GDP ratio 15 percentage points above the historical value at the end of 1997. According to the authors of the simulation such a manoeuvre not only would have prevented Italy to enter EMU, but probably would not have even succeeded in cutting inflation since the deterioration of public accounts would have undermined the credibility of the anti-inflationary action of monetary authorities.⁴¹ The third element of the anti-inflationary manoeuvre is the monetary policy. In Part I, the characteristics of the restrictive manoeuvre performed in the 1994-1996 period were described; the peculiarities of this manoeuvre as compared with those of the '70s and '80s were equally highlighted. When illustrating the curbing of inflation in the '90s, monetary authorities themselves underlined the importance of fiscal and income policy measures. In the final considerations read in May 1996, Governor Fazio stated:

“Fourteen months ago, at the end of March 1996, the exchange rate of the German mark was 1237 liras; the yield of 10-year public securities was 13.5 percent. Yesterday, the German mark was worth 1014 liras; the yield of securities was 9.5 percent. The crisis was overcome thanks to the correction of public accounts, to wage restraining and to a monetary policy, which reduced inflation and stabilized markets.”⁴²

Finally, it can be stated that the important results achieved in terms of curbing of inflation during the '90s were due to an anti-inflationary manoeuvre based on the utilization of three instruments: monetary policy, fiscal policy and income policy. This kind of manoeuvre significantly broke away from the experience of the '80s when the objective of price stability was pursued only by means of the monetary policy. Significant income and fiscal policy measures were adopted only following the failure of the policy of foreign exchange rate stabilization as shown by the 1992 crisis. The currency crisis was a traumatic event, which made the public opinion aware of the gap between Italy and the other European countries, and led to the social consensus which enabled the Government to adopt effective measures of public account re-equilibrium as well as significant income policy measures. The Italian case highlights the limits of the monetarist explanation of inflation. The experience in the '80s makes it possible: a) to state that the restrictive monetary policy was not sufficient to induce the public sector to reduce the growth of its deficit and workers to slow down labor cost increases; b) to point out the limits of an anti-inflationary manoeuvre exclusively based on the monetary policy. On the other hand, the experience in the '90s shows that an anti-inflationary manoeuvre based on the simultaneous recourse to monetary policy, fiscal policy and income policy is effective.

⁴¹ Fabiani, Locarno, Oneto and Sestito (1998), p. 46.

⁴² BIYR 1996, Final Considerations, p. 28. In the same report it is stated: “The correction of public deficit overrun, the agreement on the reform of the pension system, two increases in the discount rate in February and in May modified expectations, and set the conditions for the lira recovery.” (p. 5).

CONCLUSIONS

This paper had two objectives: a) to show the limits of the monetary interpretation of the inflation pattern in Italy in the 1970-1998 period; b) to propose an alternative interpretation. In Part I of this paper, it was stated that in Italy the conditions on which the quantitative theory is based did not exist; more specifically, i) the exogenous character of money supply did not exist; ii) a significant relationship between changes in the money stock and changes in the aggregated demand could not be identified. It was also demonstrated that it is not possible to define the intensity of the monetary squeeze only on the basis of changes in money quantity. When considering also the changes in the financial wealth and in the value of real interest rates, it is not possible to conclude that in the '90s the monetary policy was more restrictive than in the '80s. On the basis of the pattern of real interest rates, the contrary seems true.

In Part II, an alternative explanation of inflation on the cost-based inflation theory is put forward. This interpretation identifies a discontinuity in the process of inflation curbing in the '80s and in the '90s. The 1992 currency crisis is the episode separating the two sub-periods, which differ in relation to the characteristics of the anti-inflationary manoeuvre. The action implemented in the '80s is based only on the monetary policy; instead, the manoeuvre in the '90s is characterized by the recourse to all three instruments. The experience in the '80s highlights the limits of the anti-inflationary manoeuvre based on the monetary policy only. The 1992 currency crisis is to be ascribed not so much to a not sufficiently rigorous monetary policy, but rather to the disequilibria resulting from an anti-inflationary manoeuvre exclusively based on the monetary policy. The experience in the '90s outlines the effectiveness of an anti-inflationary action based on the simultaneous recourse to the monetary, fiscal and income policies. The fact that significant income and fiscal policy measures were adopted only concurrently to and following the 1992 devaluation - which represented the failure of the foreign exchange stabilization policy - shows that the argument whereby the decisions of the monetary authorities can condition the behavior of the public sector and of workers, is groundless.

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